

Claims

What is claimed is:

1. A balance weight for a tire/wheel assembly comprising:
a cartridge comprising an interior chamber at least partially filled with a flowable balance media; and
wherein the cartridge is longitudinally arcuate, at least when attached to a wheel or a tire, about an angle of upto 180 degrees or less.
2. The balance weight of claim 1 further comprising a means for attaching the cartridge to the wheel or the tire.
3. The balance weight of claim 2, wherein the means for attaching the cartridge to the wheel or tire is an adhesive.
4. The balance weight of claim 2, wherein the cartridge is attached to the innerliner of a tire.
5. The balance weight of claim 2, wherein the cartridge is attached to the wheel at a location selected from the group consisting of a rim flange, a spider section, a pressurized side of a tubewell, and a non-pressurized side of the tubewell.
6. The balance weight of claim 2, wherein the means for attaching the cartridge to the wheel is a clip.
7. The balance weight of claim 1, wherein the flowable media occupies between 5 and 95 percent of the volume of the interior chamber.
8. The balance weight of claim 1, wherein the flowable media occupies the entire volume of the

interior chamber.

9. The balance weight of claim 1, wherein the flowable media is at least partially comprised of a material selected from the group consisting of ferrous metals, non-ferrous metals, ceramics, plastics, glass, alumina, and polymers.

10. The balance weight of claim 1, wherein the flowable media is at least partially comprised of a form selected from the group consisting of particulates, spheres, powder, shot, and beads.

11. The balance weight of claim 1, wherein the flowable media is at least partially comprised of a liquid.

12. The balance weight of claim 1, wherein the cartridge is manufactured of a polymeric material or a metallic material.

13. The balance weight of claim 1, wherein the cartridge is manufactured as an extrusion, molded, or fabricated.

14. The balance weight of claim 1, wherein the cartridge has a cross-sectional geometry in the form generally of a "D", an oval, square, or a rectangle.

15. The balance weight of claim 1, wherein the cartridge is longitudinally arcuate about an angle of about 90 degrees or less.

16. The balance weight of claim 1, wherein the cartridge is longitudinally arcuate about an angle of about 15 degrees - 45 degrees.

17. The balance weight of claim 1, wherein the cartridge comprises a plurality of interior chambers.

18. The balance weight of claim 1, wherein the flowable media dampens vibration of the tire/wheel assembly.

19. A tire comprising:

a tire body having an integral balance weight comprising an interior chamber at least partially filled with a flowable balance media; and

wherein the interior chamber is longitudinally arcuate about an angle of 180 degrees or less.

20. A wheel comprising:

a wheel body having an integral balance weight comprising an interior chamber at least partially filled with a flowable balance media; and

wherein the interior chamber is longitudinally arcuate about an angle of 180 degrees or less.

21. A method of balancing a tire/wheel assembly comprising the steps of:

providing a tire and a wheel;

providing at least one balance weight comprising a cartridge comprising an interior chamber at least partially filled with a flowable balance media, wherein the cartridge is longitudinally arcuate, at least when attached to a wheel or a tire, about an angle of upto 180 degrees or less; and

attaching the at least one balance weight to one of the tire and wheel such that when the tire is mounted on the wheel, the assembled tire and wheel are balanced.

22. The method of claim 21, wherein the step of providing at least one balance weight is providing two balance weights, each sized to cover generally 180 degrees of the wheel or tire, provided and attached end to end on opposite sides of the wheel or tire.

23. The method of claim 22, further comprising the step of providing two additional balance weights, each sized to cover generally 180 degrees of the wheel or tire, provided and attached end to end on opposite sides of the wheel or tire and generally adjacent to the first two balance weights.

24. The method of claim 21, wherein the step of providing at least one balance weight is providing a plurality of balance weights positioned generally end to end and attached circumferentially about the wheel or tire, wherein each balance weight occupies less than 180 degrees of the tire or wheel circumference at the location of attachment.